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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/591,560	06/09/2000	Emad N. Farag	2925-0326P	3532
30594	7590	01/28/2004	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 8910 RESTON, VA 20195			CHANG, EDITH M	
			ART UNIT	PAPER NUMBER
			2634	7
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/591,560

Applicant(s)

FARAG ET AL.

Examiner

Edith M Chang

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-11,13,15 and 16 is/are rejected.
- 7) ☒ Claim(s) 2,3,12 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 June 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed November 6, 2003 have been fully considered but they are not persuasive.

Argument: The Examiner cites column 8, lines 25-31 of McGuffin to teach the dynamic acquisition search window. The window of acquisition described by McGuffin does not teach an acquisition window being dynamically adjusted in proportion with an inactive period of data transfer.

Response: The Examiner cites "66 FIG.3, FIG.6; column 8 lines 25-31, column 9 lines 55-65 wherein the switchcircuit 66 shifting the delay tap increases the window in proportion to a time duration of the inactive period i.e. no output detection" in the first office action. The 66 FIG.3 is the switch circuit used in the FIG.6 when there is no detection of signal (that is inactive period); the FIG.6 teaches the dynamic changing the acquisition search window when there is no detection by changing the switchcircuit 66 to another position; column 8 lines 25-31 and column 9 lines 55-65 further teach the functions of 66 FIG.3.

Drawings

2. The drawings are objected to because the figure 6 lacks the x axis and its unit to indicate the invention. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claims 2-3, and 12-15 are objected to because of the following informalities:

Claim 2, it suggested add the legend of t as it first appears in the claim to clearly indicate the invention.

Claim 3 is objected as the dependent claim of objected claim 2.

Claim12, it suggested add the legend of k, t, or kt as they first appear in the claim to clearly indicate the invention

Claim13, it suggested add the legend of k, t, or kt as they first appear in the claim to clearly indicate the invention.

Claims 14 & 15 are objected as dependent claims of objected claim 13.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 1, 10-11, 13, & 15-16 are rejected under 35 U.S.C. 102(b) as being anticipated by McGuffin (US Patent 4217586).

Regarding **claim 1**, McGuffin discloses a method for detecting a multipath component of packet data at a receiver (Abstract, FIG.1) comprising: identifying viable multipath components received by a receiver during an active period of data transmission, whereby packet data is

transmitted (column 1 lines 12-30); and searching for a multipath component during an inactive period of said data transmission (FIG.6), including defining a dynamic acquisition search window having a time width which increases in proportion to a time duration of the inactive period (66 FIG.3 provides different search window, FIG.6 where the search window is increased by changing 66 in proportion to a time duration of the inactive period (when the detection is less threshold is the inactive period); column 8 lines 25-31, column 9 lines 55-column 10 line 6 wherein the switchcircuit 66 shifting the delay tap increases the window in proportion to a time duration of the inactive period i.e. no output detection in FIG.6 NO for is there a detection?).

Regarding **claim 10**, McGuffin discloses a method for acquiring a packet data multipath component at a receiver, comprising: associating a standard search window with a first packet data multipath component received at the receiver (FIG.6 START SEARCH, INTERVAL COMPLETED?); upon loss of the first packet data multipath component (FIG.6 A DETECTION? NO), defining an acquisition search window having an initial width corresponding to the standard search window (FIG.6 CHANGE SWITCHCIRCUIT 66,66 FIG.3); searching for a second packet data multipath component across a width of acquisition search window (FIG.6 loop back to START SEARCH, INTERVAL COMPLETED?); and until a second packet data multipath component is detected, expanding a width of the acquisition search window in proportion to a period of time elapsed since loss of the first packet data multipath component and searching for a second packet data multipath component across a width of the expanded acquisitions search window (FIG.6 till A DETECTION? YES).

Regarding **claims 11 & 15**, McGuffin discloses the method of searching for a second packet data multipath component comprises: comparing a detected signal with a reference signal (11-22 FIG.1); determining a value corresponding to the comparison of the detected signal and the reference signal (out put of 22 FIG.1); repeatedly shifting the detected signal incrementally relative to the reference signal (46-50 g_{1...L} * FIG.1, FIG.3), comparing the relatively shifted detected signal and reference signal (42-22 FIG.1), and determining a value corresponding to the comparison of the detected signal and the reference signal (22 FIG.1), thereby obtaining a plurality of values corresponding to the comparisons between the detected signal and the reference signal (out put 22 , 46-50 FIG.1; inputs 82&56 FIG.3) , the incremental shifting continuing up to an instantaneous width of the acquisition search window (82 FIG.3, FIG.6); identifying the highest value among the plurality of values corresponding to the comparisons between the detected signal and the reference signal (inputs 82 FIG.3, FIG.6); and comparing the highest value to a threshold value (80 FIG.3), such that exceeding the threshold value corresponds with identification of the second packet data multipath component.

Regarding **claim 13**, McGuffin discloses a method for detecting a multipath component at a receiver, comprising: upon loss of a multipath component (A DETECTION -> NO FIG.6), searching for a new multipath component over a dynamic acquisition search window having a time width which increases in proportion to a length of time during which no multipath component is detected (CHANGE SWITCHCIRCUIT 66-> START SEARCH FIG.6).

Regarding **claim 16**, McGuffin discloses the dynamic acquisition search window has an initial start point and an initial end point, and a dynamic start point that varies as a function of time and a dynamic end point that varies as a function of time (FIG.6 wherein changing

switchcircuit 66 to another position has an start point and end point that vary as a function of time).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 4-6, & 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over McGuffin (US Patent 4217586) in view of Yamashita (US Patent 6377614 B1).

Regarding **claim 4**, McGuffin discloses a method identifying viable multipath components during an active period of data transmission comprises searching for multipath components of packet data (a section of the data transmitted) using a standard search window associated with the adaptive signal processor in the receiver (FIG.1, column 2 lines 1-10), however McGuffin does not explicitly specify the receiver as “rake receiver” the term used at the present time (Abstract). However Yamashita teaches the standard search associated with the rake fingers in the rake receiver, having the greatest power amongst the rake fingers in the rake receiver (11 FIG.1, column 1 lines 53-58 ‘614). As McGuffin using the receiver for multipath components of a spread spectrum communication, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the rake receiver taught by Yamashita in McGuffin’s spread spectrum communication (column 1 lines 25-28 ‘586) to acquire the multipath signal while maintain the path diversity.

Regarding **claim 5**, McGuffin discloses viable multipath components received by a receiver during an active period are identified until no multipath components are received by the receiver (FIG.1, FIG.6).

Regarding **claims 6 & 8**, Yamashita teaches a transmitter transmitting the packet data is a mobile terminal or receiver is a mobile terminal (column 4 lines 10-15) that moves relative to the receiver/transmitter during one or both of the active period and the inactive period (column 1 lines 40-45). As McGuffin using the receiver for multipath components of a spread spectrum communication (Abstract), it would have been obvious to a person of ordinary skill in the art to have the mobile receiver taught by Yamashita in McGuffin's spread spectrum communication (column 1 lines 25-28 '586) to acquire the multipath signal while maintain the path diversity for various applications.

8. Claims 7 & 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over McGuffin (US Patent 4217586) in view of Yamashita (US Patent 6377614 B1) as applied to claim 1 above, and further in view of Bloebaum (US Patent 6188351 B1).

Further Bloebaum teaches the width of the dynamic acquisition search window is increased in correspondence with an expected maximum speed of the mobile terminal (column 3 lines 54-column 4 line 5, Fig.2b & Fig.3) wherein the search window increased in correspondence with the expected maximum speed of the mobile terminal u'. As one of McGuffin's objectives of invention being to receive multipath signals by a communication system installed in a moving vehicle (column 1 lines 18-30), at the time of the invention, it

would have been obvious to a person of ordinary skill in the art to have the Bloebaum's teaching in McGuffin's acquisition search window to reduce the code shift searching/code acquisition.

Allowable Subject Matter

9. Claims 2-3, 12, & 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and rewritten to overcome the objections in the third paragraph of this office action.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edith M Chang whose telephone number is 703-305-3416. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4800.

Edith Chang
January 9, 2004



**CHIEH M. FAN
PRIMARY EXAMINER**